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2443 Kc.	5700 Kc.	6325 Kc.	6925 Kc.	7250 Kc.
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2760 Kc.	5725 Kc.	6375 Kc.	6975 Kc.	7300 Kc.
2979 Kc.	5744 Kc.	6400 Kc.	7000 Kc.	7325 Kc.
2990 Kc.	5750 Kc.	6425 Kc.	7002.5 Kc.	7350 Kc.
3380 Kc.	5775 Kc.	6450 Kc.	7003 Kc.	7375 Kc.
3500 Kc.	5825 Kc.	6475 Kc.	7005 Kc.	7400 Kc.
3533 Kc.	5850 Kc.	6497.5 Kc.	7010 Kc.	7425 Kc.
3535 Kc.	5852.5 Kc.	6500 Kc.	7011.75 Kc.	7450 Kc.
3537 Kc.	5875 Kc.	6522.5 Kc.	7012 Kc.	7475 Kc.
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3925 Kc.	5925 Kc.	6547.5 Kc.	7021.7 Kc.	7525 Kc.
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4205 Kc.	6000 Kc.	6575 Kc.	7032.5 Kc.	7600 Kc.
4285 Kc.	6025 Kc.	6600 Kc.	7050 Kc.	7625 Kc.
4285 Kc.	6050 Kc.	6625 Kc.	7075 Kc.	7650 Kc.
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ADVERTISING REPRESENTATIVE:BEATRICE TOUZEAU,
96 Collins St., Melbourne, C.1.
Telephone: MF 4595**PRINTERS:**"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.1.
Telephone: JB 2419.

MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," C.O.R. House, 191 Queen Street, Melbourne, C.1, on or before the 8th of each month.

Subscription rate in Australia is 12/- per annum, in advance (post paid) and A15/- in all other countries.

Wireless Institute of Australia
(Victorian Division) Rooms' Phone
Number is MY 1087.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcast.

VK1WI: Sundays, 1100 hours EST, 7140 Kc. and 2000 hours EST 58 and 144 Mc. No frequency checks available from VK3WI intrastate working frequency, 7125 Kc.

VK4WI: Sundays, 1130 hours EST, simultaneously on 3573 and 7145 Kc., 57.5 and 146.25 Mc. Intrastate working frequency 7135 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK6WI: Sundays, 0900 hours EST, simultaneously on 3580 and 14345 Kc. 3580 Kc. channel is used from 0915 hours to 1915 hours each Sunday for the W.I.A. Country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours EAST, on 7145 Kc. Frequency checks are given by VK3WD and VK3WI by arrangements on all bands to 56 Mc.

VK3WI: Sundays, 0930 hours WEST, on 7145 Kc. No frequency checks available.

VK1WE: Sundays, at 1000 hours EST, on 7145 Kc. and 3573 Kc. No frequency checks are available.

VK3WI: Sundays, 1000 hours EST, simultaneously on 3.5, 7, 14 and 144 Mc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

Published by the Wireless Institute of Australia,
C.O.R. House, 191 Queen Street,
Melbourne, C.1.

EDITORIAL



UNITED WE STAND—ALONE WE FALL

The purpose of "Federation" is to ensure that the signatories to the agreement are able to work together in union, in order to withstand the attacks of a common enemy.

For the guidance of all a set of rules is laid down which ALL agree to abide by, until by mutual agreement rules which appear unworkable or outdated are removed or replaced by more acceptable rules.

In the case of the W.I.A. this power is entrusted to your Federal Council, after each Divisional Council has had an opportunity to fully discuss the proposed change. Differences which appear insuperable on paper usually vanish after representatives have had the opportunity of discussing them around the table at a Federal Convention.

From time to time there appears on the horizon some bush lawyer with a pet theory or an axe to grind. In some cases he conditions the minds of his local audience in the

traditional Hitler style until they are fully convinced he is right. Fortunately for the well being of the community as a whole common-sense prevails and the problem is brought to the conference table for a decision by the majority.

He who insists on creating a kingdom of his own, because he cannot agree to abide by the rules laid down by others, is like the master of a ship who insists on leaving the protection of the convoy because he doesn't like the rules or agrees with the decision regarding route to be followed. He eventually loses his ship either by enemy action or because owners wisely realise that he is needlessly hazarding his ship—hence the moral of our title.

Be wise, insist that your Delegate submit problems to Federal Council at the Convention in order to ensure continuity of the unity which is our strength.

FEDERAL EXECUTIVE.

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THE MONIMATCH[®]

An Inexpensive S.W.R. and Power Indicator

BY LEWIS G. MCCOY, W1ICP

IF you have had the opportunity to use a bridge or reflectometer of the type that can be permanently connected to the transmitter, even at inputs up to a kilowatt, you know what a handy instrument it is for tuning transmitters and adjusting antenna systems. It will not only show you when the load at the end of your transmission line is matched to the line, but will furnish a continuous indication of the match. It will also give a visual indication of your relative power output, which can be quite important when making tuning adjustments.

The "Monimatch" is an easy-to-build version of such a bridge, based on a design developed at the Naval Research

● Here it is—an s.w.r. bridge that can be left in the line with any Amateur transmitter, costs only pennies to make, and offers no constructional problems. We have called it the "Monimatch," to indicate its dual function of showing when a match is achieved during matching-network adjustments, and thereafter monitoring the line to make sure that nothing has gone out of adjustment. Make one and you'll find the major problems of matching and transmitter tuning are problems no longer.



● The essentials of the Monimatch are a few pieces of metal, a resistor, two diodes, and some fittings. Figs. 1 and 2 show the dimensions.

Laboratory. It is simply a section of transmission line to which a linear inductor is closely coupled. The combination of inductive and capacitive coupling is such that the incident component of r.f. voltage on the line is balanced out when the constants are properly chosen, leaving only the reflected component to actuate an r.f. voltmeter used as the indicator. The circuit of the Monimatch, shown in Fig. 1, combines two such bridge circuits back to back so that either the incident or reflected component may be read.

With this type of bridge or reflectometer the current flowing through the indicator circuit is a function of the operating frequency, so the circuit of Fig. 1 uses an adjustable resistor in series with the d.c. instrument to keep to readings in the desirable part of the meter scale. This avoids the necessity for adjusting the transmitter output to an "on-scale" level, but in turn precludes the possibility of an accurate s.w.r. calibration because the linearity of the rectifier-type r.f. voltmeter used as an indicator is too greatly affected by the amount of resistance in the d.c. circuit. It does not, however, affect the accuracy with which a good match between load and line will be indicated.

The dependence of voltmeter readings on frequency also makes a direct power calibration impracticable. But despite the fact that calibration in terms of either power or s.w.r. is not especially convenient (although not impossible), the instrument is nevertheless capable

of performing the really important functions of determining when a match exists, monitoring the match, and showing relative power output.

CONSTRUCTIONAL DETAILS

It is usually most satisfactory, for the majority of installations, to build the Monimatch in two units, the bridge itself and an indicator unit. A view of the bridge is given in the photograph, with additional constructional details shown in Fig. 2. This unit is built in a 12 x 24 x 2 inch aluminum slip-cover-type box with all parts mounted on the piece having one side and the two ends. The indicator section, which is not shown since there

is nothing particularly novel in its construction, can be mounted in an ordinary meter case. Such a case will provide sufficient room for the 3 c. milliammeter or microammeter (whichever is used) together with the variable resistor and toggle switch shown in Fig. 1.

The transmission line section should have a characteristic impedance approximately equal to that of the actual line to be used with the device, but this point does not seem to be very critical. The construction shown works equally well with 50 and 75 ohm lines, and does not introduce a perceptible s.w.r., over the primary frequency range for which the Monimatch was designed, when inserted in a matched line. (The bridge is useful, incidentally, on both 50 and 144 Mc., the latter frequency being about the limit at which the line length in the instrument could be considered small enough compared with the wavelength.)

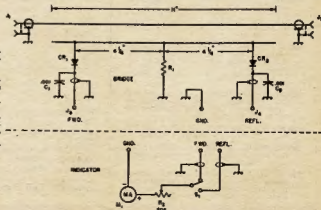
The line section consists of a metal trough with 8" sides for the outer conductor, and a length of 1" copper tubing centered in the trough as the inner conductor.

In the unit shown in the photograph, the first construction step was making the 1" diameter holes for the co-ax sockets in the ends of the box. These should be located as shown in Fig. 2. When the co-ax receptacle is mounted it extends approximately 1" inside the box; the trough fits around this protrusion when it is mounted in place.

The trough can be made either from thin aluminum or copper sheet, aluminum being used in the model shown here. It should be made 12 1/2" long and then cut back 1/2" at each end to make a 1" tab, as shown in Fig. 2 for holding the trough in place. The preferable method of mounting is to drill a hole in the tab and secure it with one of the screws that holds the co-ax fitting. This requires that the fitting be mounted with its sides making angles of 45 degrees with the edges of the box, as

Fig. 1—Circuit diagram of the Monimatch.

- J1, J2—Co-ax receptacles, chassis mounting type.
- J3, J4—Insulated tip-jacks.
- R1—68 ohms, 1 watt, for 50 ohm line.
- R2—25,000 ohm potentiometer.
- S1—S.p.d.t. toggle.



shown in the drawing. An alternative is to use a short length of stiff wire, fastened under two of the screws, to clamp the tab to the fitting. (This is the method used in the unit pictured.) Before mounting the trough, the $\frac{1}{4}$ " copper tubing should be installed between the two inner conductor terminals of the co-ax fittings. The length of the tubing is approximately $11\frac{1}{2}$ ", and its ends are soldered to the co-ax fittings.

After the trough-line assembly is complete the next step is mounting the bridge wire, an $11\frac{1}{2}$ " length of No. 14 gauge tinned wire. First, trim the leads on R1 to approximately $\frac{3}{4}$ ". Solder one of these leads to a soldering lug mounted on the side of the box (about 1" from the edge) as shown in the photograph. Next mount the tie points which support the crystal diodes. They should be placed 2" from the ends of the box and 1" from the edge. Two short leads of shielded wire are used to connect each of the tie points to the insulated pin jacks, J3 and J4. The pin jacks may be mounted in any convenient location. The cathode leads of the diodes and the 0.001 μ F. disc capacitors can then be mounted in place on the tie points. When soldering a diode, hold the lead with a pair of pliers to conduct the heat away, since the heat of soldering can ruin a diode.

INDICATOR

The required sensitivity of the d.c. meter for the indicator will depend on the frequency band and the amount of power used. Typical current values are shown in Table 1. A 0-1 milliammeter is usable for power inputs over 100 watts. At 100 watts, the 0-1 instrument won't be sensitive enough to give a full-scale deflection on 150 and 80 metres (it takes about 200 watts at 3.5 Mc. for full scale), but it isn't actually necessary to have a full-scale deflection for impedance matching purposes. On the higher frequency bands the 0-1 milliammeter will be adequate even with 25 watts input.

If the power input is less than 50 watts and the bridge is to be used on 160 and 80 metres a 0-100 microammeter will be needed to obtain large enough readings for matching. Incidentally, don't worry about burning out a sensitive meter if high power is used. Naturally, caution should be used when

making adjustments, but it is only necessary to be sure that there is enough resistance in series with the meter before tuning on the transmitter. After power is applied the resistor can be adjusted, if desired, to give full scale deflection in the forward direction.

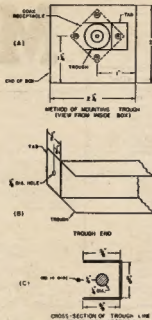


Fig. 2.—The drawing at A shows the method of mounting the trough to the end of the box. The trough is held in place by one of the screws that fastens the co-ax fitting to the box. Dimensions and constructional details of the trough ends are shown at B. A cross sectional view of the trough, inner conductor, and bridge wire is shown at C.

SETTING UP

A non-reactive load of the correct resistance to match the co-ax line is needed for the adjustment of the bridge. If you do not already have such a load or a dummy antenna of known resistance, a suitable dummy for 52 ohm co-ax can be made by connecting four 220 ohm 1 watt resistors in parallel, keeping the connecting leads just as short as possible. This will provide a 4 watt 55 ohm load, close enough to 52 ohms for the purpose. For 75 ohm co-ax, the load can consist of four 300 ohm 1 watt resistors in parallel.

Initial adjustments should be made on 28 Mc. Connect the transmitter to J1 and connect the dummy load (with short leads) between the inner conductor terminal of J2 and chassis

ground. Adjust the transmitter output to approximately four watts, taking care not to over heat the dummy load. If the transmitter does not have built-in provision for reducing power output to this level, the arrangement shown in Fig. 3 may be used. The 40 watt lamp in series with the bridge will limit the r.f. current to about the proper value at powers up to 50 watts or so, and for higher power a second lamp may be connected across the line as shown. The total lamp wattage should be approximately equal to the actual output of the transmitter.

Solder the centre of the $11\frac{1}{2}$ " wire to the remaining lead from R1 and space it about $\frac{1}{2}$ " from the inner conductor of the trough line. The free lead of CR2 should be soldered to the wire approximately $4\frac{1}{2}$ " from R1, as shown in Fig. 1. Before turning on the transmitter for the first test, make sure that the wire does not touch the inner conductor at any point. Then turn on the transmitter and check the reading on the meter. It should be very low or zero. If there is any meter indication, the diode lead should be unsoldered and moved a short distance one way or the other along the wire and the test tried again. When the point is found that gives a good null or zero reading, the bridge is in adjustment for reading reflected power.

Next, remove the bridge from the line and reverse the input and output connections; that is connect the cable from the transmitter to J2 and the dummy load to J1. Then solder CR1 to the bridge wire at the same distance from R1 as CR2, but on the opposite side. Follow the same procedure again, adjusting the position of CR1 for the lowest possible reading. The bridge is then ready for use.

If the bridge is going to be used on 6 or 2 metres and the power input is over 50 watts, the bridge wire should not be coupled as closely as described above. The proper distance will have to be found by experiment, but probably will not be more than $\frac{1}{4}$ " from the inner conductor.

USING THE MONIMATCH

If you use an antenna coupler or balun coils in your antenna system, the bridge should be inserted in the co-ax line between the transmitter and coupler or balun. If a low-pass filter is used for T.V.I. reduction, the bridge should be placed between the transmitter and the filter so harmonics generated in the diodes will not reach the antenna. The indicator unit can be placed in any convenient location. However, to avoid stray r.f. pick-up on the leads from the bridge to the indicator, the leads should be run in shielded wire.

(Continued on Page 13)

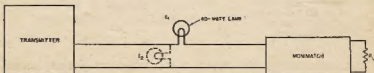


Fig. 3.—Shown above is a simple method of reducing the power output to prevent overheating the four-watt dummy load (R1). For transmitters of more than 50 watts output another lamp (R2), or lamps, should be shunted across the line to make the total lamp wattage equal the transmitter power output. If the transmitter has a drive control or some other method of reducing the output, the above system won't be needed.

Table 1
Typical values of rectified current with the indicator switched for forward reading. R3 at zero resistance, and the coupling wire spaced $\frac{1}{4}$ inch from the inner conductor.

Band	10 Watts Output	50 Watts Output
1.8 Mc.	25 μ A.	100 μ A.
3.5 Mc.	72 μ A.	250 μ A.
7 Mc.	200 μ A.	1 ma.
14 Mc.	750 μ A.	Over 1 ma.
21 Mc.	Over 1 ma.	"
28 Mc.	"	"

An output power of slightly over 300 watts was required to obtain a reading of 1 Ma. on 3.5 Mc.

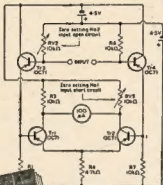
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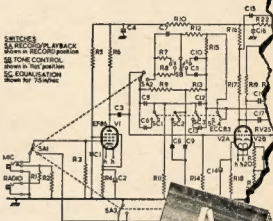
only the top of the wedge is fluorescent, and then that too becomes cut off; the dot is the last part of the display to be extinguished.

When the bridge is balanced, there is zero input, the 'eye' is open and gives the full 'exclamation mark' display.



amplification of nearly 4, thus causing a voltage meter which is proportional to the applied

SWITCHES
SA, RECORD/PLAYBACK
shown in RECORD position
SB, TONE CONTROL
shown in flat position
SC, EQUALISATION
shown for 75 m/sec



5139



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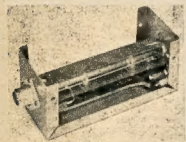
MONIMATCH, MARK II.

An Improved Version of a Popular S.W.R. Monitor

BY LEWIS G. McCOY, W1ICF

MONIMATCH Mark II., the result of questions and suggestions from many builders of the original unit, has several features that represent improvements over the original design (see Page 2). For one thing, the size has been reduced to less than half. This is accomplished by using two short linear inductors, placed on opposite sides of the centre conductor of the line section, instead of a single long one. The box for housing the Mark II. is only 5 inches long, so the unit can more easily be fitted into a transmitter or antenna coupler.

Another feature is the simplification of the construction work. In the original unit a U-shaped trough was used for the outer conductor of the line section. This required a metal-bending job. In experimenting to determine the necessity for using such a trough it was found that two flat strips of metal properly spaced from the inner conductor did an excellent job. In the Mark II., separation between the inner conductor and these strips is maintained at the proper value by two spacers made from insulating material. These spacers also serve the purpose of supporting the two bridge wires.



The smaller size of the Mark II. makes the unit suitable for mounting inside a transmitter or antenna coupler. As mentioned in the text, the outer conductor strips are held in place by soldering lugs mounted under the nuts of the co-ax fittings.

The indicator circuit of the revised bridge remains the same as in the original version. The description below is therefore confined to the bridge itself.

CONSTRUCTION

The Mark II. is mounted in a 2½ x 2½ x 5 inch aluminum box. The 5 inch dimension is the only critical one. Any available insulating material of reasonably low loss, such as polystyrene or bakelite, is suitable for the spacers. The dimensions of these pieces are given in Fig. 2.

When the spacers are completed they can be slipped over the inner conductor rod, which is a piece of ½ inch o.d. copper tubing, 4½ inches long. One of the co-ax chassis fittings should be mounted on one end of the box, posi-

● Just as we were ready to go to press the February copy of "QST" arrived with this Mark II. version of the Monimatch, so with haste we included it with the original Monimatch. Here's a still better version—smaller and even easier to make. It uses the same indicator as the first model.—Ed. "A.R."

tioned as shown in the photograph. The inner conductor pin of the fitting should be tinned with solder and one end of the copper tubing slipped over it and soldered in place. Then the other fitting can likewise be tinned, mounted on the opposite end of the box, and the connection soldered.

● Fig. 1.—Coupling circuit of the Monimatch Mark II. Strip conductors forming the outer conductor of the line sections are not shown.

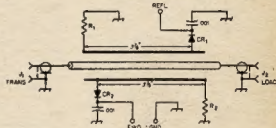
CR1, CR2—1N34A diodes.
J1, J2—Co-ax chassis receptacles.
R1, R2—See text.

● Next, the two strips used as the outer conductor can be installed. These are ½ inch wide and 4½ inches long, and can be made from copper, brass, or even tin from a tin can. The method of mounting them in place is simple. Solder a soldering lug to each end, allowing the end of the lug having the screw hole to project beyond the edge. Bend this part of the lug at right angles to the strip. The top and bottom screws and nuts of the co-ax fittings are used to hold the strips in place. This, along with the insulating spacers, insures correct alignment of the strips with the inner conductor.

● The bridge pick-up wires are 4 inches long and are made from No. 14 tinned wire. For a 50 ohm bridge, 150

ohm ½ watt resistors are used for R1 and R2. For 75 ohms, 100 ohm ½ watt resistors will do. Most important, the resistors should be carbon or composition, not wire wound. Many builders of the original unit were unable to get a null because they failed to use carbon resistors.

Standard one terminal tie points are used at each end of the box to hold the 1N34A diodes and the 0.001 µF. disc ceramic capacitors. These and the pin jacks for the indicator leads can be mounted in place after completing the bridge assembly as described above. Next, solder a resistor to one end of each bridge pick-up wire, keeping the resistor lead as short as possible. The wires can then be placed in the slots in the spacers, after which the other resistor leads should be soldered to lugs



secured under mounting nuts at the adjacent co-ax fittings. The diodes are connected approximately ½ inch from the opposite ends of the wires. This dimension is not critical.

Table I in the original unit gives typical values of rectified current with the indicator switched for forward reading. The figures for the Mark II. will be approximately the same.

The writer will be happy to hear from builders of this unit (as well as the original) who may have further suggestions for improvements. Who knows?—maybe we can have a Mark III!

CORRECTION TO CLAMP TUBE MODULATOR

There has possibly been some confusion due to the incorrect circuit diagram published with this article on page 7 (3rd column) of December, 1956, "Amateur Radio."

The matter has been clarified and we suggest you make the following corrections to the original drawing:

(1) Tie plate and screen of 6L6 together, making the modulator tube a triode.

(2) Reverse connections to switch in lead between 6L6 modulator "plate" and screen of final. The R3 and 2 µF. capacitor should be shorted out for c.w. operation.

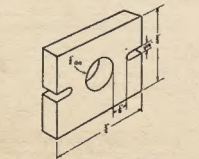


Fig. 2.—Dimensions of the insulating spacers used to hold bridge wires and outer conductor strips in place.

A Home Made Three Bander

BY F. H. HARLOCK,* VK6GU

THE writer first heard of the G4ZU beam when VS2BL presented him with a copy of "The Malaysian Radio Amateur," and he read the article (Vol. 4, No. 2, p.21) by G4ZU.

This article has been published in many other magazines, and this fact indicates the widespread interest in the beam.

It was learned that the basic principle involved in the use of shortened elements, inductance loaded at the centre, with electronic switching utilising resonant (quarter-wave) lengths of twin feeder to short out the inductances at certain frequencies.

A major step forward was the realisation that having found the physical length of a parasitic element at a certain frequency, the resonant frequency of a driven element of the same physical length must be determined. Having decided arbitrarily on 14.2 Mc. and 21.2 Mc., the length of a reflector for 14.2 Mc. was found to be 35' 4", and the resonant frequency of a driven element of this length using the formula $Lf = 475$, L being in feet and f in Mc., (which formula allows for end effect), is 13.44 Mc. Similarly, the length of a director for 21.2 Mc. is 21' 6", and the resonant frequency of a driven element of this length is 22.09 Mc. These are the frequencies to which the reflector and director, respectively, were loaded.

As the writer was unable, at the time, to proceed with construction of his own beam, the prototype was built with and for VK6NF. One inch diameter split conduit was used for the elements, the lengths being eight feet aside for the director, 12 feet aside for the driven element, and 11' 6" aside for the reflector, the director and reflector being respectively five and seven feet from the driven element. A one-inch gap was left between the adjacent ends of each half element. Quarter wave switching sections (of 300 ohm tubular transmission line) were cut to the lengths required (allowing for velocity factor) for 21.2 Mc. and 28.3 Mc.

The three frequencies quoted, 14.2, 21.2 and 28.3 Mc. were chosen because they are frequently used by both VK6NF and the writer. They are also more or less in the middle of the most used parts of the three bands concerned.

These quarter wave sections were fastened to the inside ends of the reflector and director respectively, and were allowed to hang freely. Coils, approximately two inches in diameter, made of 12 gauge copper wire, were bolted to the inside ends of the reflector (8 turns used) and director (4 turns). Each coil is now in parallel with a quarter wave section, across the centre of a parasitic element.

The coils were spread or compressed until each element was found to be resonant at the required frequency (see above), using a grid dip meter coupled to the inductance at the centre. The tuning is quite critical.

● This article has been written in response to requests from many Amateurs contacted by the author when using the beam. It comprises a description of the G4ZU beam, as modified by the author, together with practical constructional and operational details, and includes a step by step description of all things done whether successful or otherwise. Unsuccessful experiments have a definite value, if only to save the time of others who endeavour to duplicate the construction.

At this point, explanation of the theory of operation is no doubt warranted.

On 10 metres, the system acts as a five-element beam, with the driven element working as two half-waves in phase. The reflector may be likened to two half-wave reflectors in phase. The effect of the quarter-wave section in the reflector, which is cut to suit a frequency of 21.2 Mc., is purely that of a small capacity between the elements, and the elements are effectively isolated from each other because of the impedance of the central loading coil. The director, which has an inductance and a quarter-wave switching section cut to the length required for 28.3 Mc., then becomes a single length because the quarter-wave section sets up an electronic short circuit across the inductance.

For the 15 metre band the driven element is an extended driven element. The director, which is centre loaded, has already been adjusted to the electrical length of a 21 Mc. director—the 28 Mc. section having no effect at this frequency. The quarter-wave switching section in the reflector electron-

ically short-circuits the central inductance, making the reflector effectively a single length.

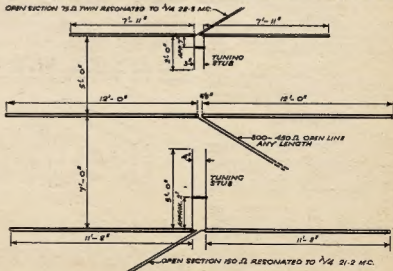
On 20 metres, there is a shortened driven element and a loaded reflector, the quarter-wave 21 Mc. section having no effect at 14 Mc. The director has no material effect when the system is used on this band.

The antenna was fed from a parallel antenna tuning unit by means of 300 ohm transmission line made up to the required length, and was found to load well on all three bands. Experiments were conducted using 72 ohm co-axial cable as the quarter-wave section on the director, but the capacity was so high that it was necessary to reduce the number of turns of the loading inductor. This was not a practicable proposition, as somewhere between one-half and three-quarters of a turn was needed.

Reception only checks were made with the antenna only three (1) feet from the ground, and a very satisfactory front-to-back ratio was observed on fifteen metres. No findings could be recorded concerning 10 or 20 metres owing to lack of activity.

The prototype, in a very rough form and only three feet from the ground, was given a trial on 21 Mc. during one of the daily contacts between VK6NF and ZS5MP. A report of RS S7-8 was considered sufficiently encouraging to warrant dismantling the three stacked arrays and cutting the 20 metre "ZL Special" elements to the required length for the new beam.

Modifications introduced at this stage comprised increasing the space between the various half-elements, so that the loading coils could sit in between them (instead of being mounted slightly above) and substituting 300 ohm open line for the 300 ohm tubular switching sections; on the grounds that the lower inherent capacity of the open line



* 15 Lilly Street, South Fremantle, W.A.

would allow more turns in the loading coils, with probably higher efficiency.

THE SECOND BEAM

At this stage, with VK6NF obtaining excellent results on the 10 and 15 metre bands, but not very satisfactory results on 20 metres, mainly as far as front-to-back ratio was concerned, the author commenced construction of his own beam. This was made along similar lines, but with alteration to the physical lengths of both director and reflector. Allowance must be made, in determining the total length, for the spacing between the individual half-elements, as the overall length includes the spacing when the electronic switching, due to the quarter-wave section, is operative. Thus the length of each half of the director was made 7' 11" with a three-inch gap, giving a total of 16' 1" when on 10 metres. This figure was obtained from the "A.R.R.L. Antenna Handbook." For the reflector, each side was extended to 11' 8" with a four-inch gap, a total of 23' 8". The driven element was unchanged at 12 feet per side, with spacing to suit the 300 ohm ribbon feed line used.

With this antenna six feet from the ground, excellent results were obtained on 15 and 10 metres, and many good contacts over two to three thousand miles were enjoyed on 20 metres.

This beam was then mounted on a tower 80 feet high, and excellent results on all bands in the forward direction resulted, but there was poor front-to-back discrimination on 20 metres.

At this stage the major trouble was detuning of the loading inductors due to climatic conditions, etc., causing spreading or contraction of the individual turns. As operation of this antenna depends upon reasonably accurate tuning of elements, this detuning was detrimental to its efficiency.

USE OF TUNING STUBS

An alternate method of tuning was sought and the possibility of using tuning stubs was investigated. This method has long been used for tuning parasitic elements, and with the knowledge that the system has proved satisfactory in single-band arrays, experiments were begun.

Two sets of stubs were made of half-inch diameter duralumin tubing, the stub for the reflector being five feet long, spaced four inches between centres, and the stub for the director two feet long at three inch centres. Shorting bars were fitted, and opportunity was taken now to substitute 75 ohm twin transmission line for the director switching section, and 150 ohm twin for the reflector switching section.

These changes were made because it was found that, for the same frequency, the shorting bars could be moved nearer to the elements when higher capacity sections were used. As tuning was not as critical as when inductances were used, it was thought that the closer the shorting bar could be moved to the elements the better.

Checks with ZSSMP between the author using tuning stubs and VK6NF using inductances showed a considerably better signal from the stub-tuned antenna, whereas signals when both beams were inductance-loaded had been identical during some weeks.

IMPROVING FRONT-TO-BACK RATIO ON 20 METRES

Endeavours were now made to improve the front-to-back ratio on 20 metres, without unduly upsetting the excellent results being obtained on the other bands. Theory, in regard to the frequency to which the reflector was tuned, was abandoned, and a field strength meter was used to obtain maximum attenuation on the back of the beam.

The beam was excited at 14.2 Mc., and the shorting bar of the reflector tuning stub was adjusted for minimum field strength to the rear. It was now found that the resonant frequency of the reflector was higher than the 13.44 Mc. originally calculated. Tuning of the director for maximum forward gain on 21 Mc. was not attempted, because it is considered that the tuning is sufficiently broad for the theoretical frequency of 22 Mc. to be used.

Exact adjustment of the quarter-wave switching sections is of extreme importance. The author's recommendations are that they be placed in their intended position, but not connected to either element or tuning stub. The ends to be connected to the elements should be spread to their final position, then joined together in a loop to enable the grid dip meter to be coupled for adjustment purposes. Care should be taken with the adjustment—cut off half an inch at a time. The old saying, "I've a cutter which will cut off but not one which will cut on," is still very true. When the section is cut to the right length, join each wire to the appropriate element and stub and forget it. The writer enclosed his sections in plastic tubing and sealed the ends.

The only other step in tuning the antenna is to adjust the shorting bars.

The tuning stubs on the writer's antenna are laid towards the centre of the tower for neatness. Any convenient disposition of them will be satisfactory.

An automatic antenna tuning unit was tried, but with the writer's lay-out (75 feet of open wire feeder to a parallel tuned circuit) was found to be unnecessary. VK6NF, on the other hand, uses an automatic tuning unit with satisfaction, but he is compelled by his location to use 130 feet of feeder.

SUMMARY OF CONSTRUCTION AND ADJUSTMENT PROCEDURE

1. Decide upon a frequency in each band—your most used frequency or a frequency near the middle of each band.
2. Determine the length of a reflector for the chosen frequency in the 14 Mc. band and from this calculate the frequency at which it would be resonant were it a driven element, allowing for end effect. Call this frequency "A". Determine the length of a director for the selected 21 Mc. band frequency, and calculate the resonant frequency of a driven element of this length (frequency "B").
3. Determine the length of a director for the selected 28 Mc. band frequency. From this length deduct the spacing to be used at the centre, halve the difference and cut two half-elements to this size.

Determine the length of a reflector for the chosen 21 Mc. band frequency, deduct the centre spacing and cut two half-elements as before. Cut two half elements each twelve feet long for the radiator.

4. The elements can now be mounted with the appropriate spacing (director five feet, and reflector seven feet, and reflector seven feet from the radiator).
5. Tuning stubs with shorting bars should now be made and attached to the reflector and director.
6. Cut a piece of 75 ohm twin transmission line slightly longer than a quarter-wave at the chosen 28 Mc. frequency. Put this line into its intended position, but do not connect it to the director. Couple to grid dip meter as described previously, and prune the remote end until it is resonant at the required frequency. Connect to director using the most direct connection possible.
7. Cut a piece of 150 ohm twin transmission line slightly longer than a quarter-wave at the chosen 21 Mc. band frequency. Position, adjust, and connect to the reflector as described under 6 above.
8. The feed line (of any convenient length) may now be connected to the driven element.
9. The director should now be adjusted, by means of the shorting bar for resonance at frequency "B" and the reflector to be resonated to frequency "A". Further adjustment may be necessary to the reflector later, but frequency "A" is a convenient starting point for the tuning procedure. Good coupling to the grid dip meter may be obtained by putting the g.d.m. coil in close proximity to the shorting bar. A decided "dip" can be observed with this coupling.
10. Excite the antenna at the chosen 14 Mc. band frequency and adjust the reflector tuning stub for maximum backward attenuation at this frequency, using a field strength meter.

The beam is now completed and ready for operation on the three bands. FB DX, OM! 73.

ACKNOWLEDGMENTS

The author wishes to thank the following friends for assistance in various ways. Some are mentioned by call sign in the text:

Mr. E. Powell, VS2BD, and Mr. S. Faulkner, VS2BD, for the original information.

Mr. B. Matthews, ZSSMP, and Mr. J. Hard, VK2JK, for checks and signal strength reports.

Mr. N. F. Odgers, VK6NF, for all the assistance as mentioned in the text.

Mr. E. C. Hodgson, VK6EH, for assistance in preparing the manuscript.

— . . . —

FRENCH TV SIGNALS HEARD IN SYDNEY

Norm Burton, of Revesby, N.S.W., seems to be making a habit of receiving overseas t.v. signals (see "A.R." March). On 7/2/57 Norm heard the French t.v. service sound channel on 41.25 Mc. The present sunspot conditions may lead to further reports of a similar nature.

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Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

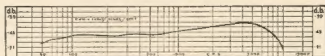
When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars, being fixed thereto with a good quality cement, thus ensuring stability and long life.

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C.D.E.N. NEWS

The Commonwealth Government is conducting a school for training Civil Defence personnel at Mount Macedon, Victoria. As part of its plan to obtain guidance from every section of the community it is through the agency of the State Governments, inviting representatives of Government Departments, Utilities, Fighting Services, Industry, Professions and Communication Services to attend short courses at the school for the purpose of learning about the proposed scheme and at the same time contributing their specialised knowledge towards the drafting of the final plan.

The Wireless Institute of Australia, as the recognised representative of Amateur Radio in this country, has been given the opportunity of sending representatives to the school.

In November, 1956, the President of the N.S.W. Division, Jim Corbin (VK2YC), was invited by the N.S.W. Government to go along with its team. On the same course, representing their respective Government Departments, were VK2ZC, VK4EF and VK4ES.

During February this year, the Federal Co-ordinator of C.D.E.N., VK3AG, was invited by the Victorian Government to represent the Federal Executive of W.I.A. at the school, where he met ex-VK4J, Leo Feenaghy, who will be remembered by old timers for his good work in VK4 Division and production of "QTC," which was at that time the Institute's Official Magazine.

Chas Taylor, ex-VK2ALE, is one of the Instructors at the school and can be relied upon to see that all representatives of the W.I.A. on these courses receive the greatest assistance possible during their stay. Chas. has further offered to give up some of his own leisure to help our C.D.E.N., for which F.E. has already expressed your gratitude.

No person attending this school could possibly come away without appreciating the gravity of the situation in the event of a national disaster, the necessity for well planned Civil Defence and Emergency Organisation and the sincerity of the Commonwealth Government and the School Staff in their desire to achieve a worthwhile and successful plan.

It is hoped that each Division of the Institute will be given an opportunity to send a representative to the school in due course.

Several things have emerged from the above events.

- Divisional Co-ordinators must strive to expand activities and maintain a high level of interest.
- The necessity for pressing Licensing Authority for granting of Novice Licence, in order to obtain sufficient training for future requirements.
- The need for immediate introduction and constant use by all Amateurs of N.A.T.O. Phonetic Code.
- The importance of a full scale discussion on this subject at the Federal Convention.

Every member of the Institute who is proud of the Radio Amateurs' record of service in national and local calamities in the past should see that his Division's Delegate comes to the Federal Convention fully briefed.

Make sure that you see and study the plan which was forwarded by Federal Executive to the Divisions many moons ago. If you disagree with any of the proposals laid down therein see that your Delegate comes along with a better one.

A.O.C.P. PRIVILEGES FOR THE BLIND

● The Wireless Telegraphy Regulations which govern the issue of Amateur Station Licences stipulate possession of certain technical qualifications, the minimum of which is either an Amateur Operator's Certificate of Proficiency or a "Limited" Certificate of the same class. This requirement is designed to ensure that Amateur Stations are operated only by competent persons and is necessary in order to avoid the interference to important radio communication services which could otherwise result.

However, in the case of a blind person or one who is unable to undertake the written examination because of a physical infirmity, authority may be given for the issue of a full privilege license which provides for radiotelegraphy and radiotelephony experimentation on all Amateur service frequency bands upon such a person demonstrating by oral test to the satisfaction of the P.M.G. Department his competency in the subjects of Theory and Regulations and his passing the prescribed morse code test of the relevant examination; success in the Theory and Regulation subjects alone would permit engagement in radiotelephony experiments in the Amateur service frequency bands from 144-148 Mc. and upwards.

In the event of the grant of an Amateur Station License to physically handicapped persons, the P.M.G. Department, recognising the hazards to which such persons may be exposed in contacting dangerous voltages are infinitely greater than is the case with those who have no physical disability, feels obliged to ensure that every protection is afforded them, for this reason, requires that the direct current plate power input to the final stages of transmitting equipment of Amateur Stations operated by such persons shall not exceed ten watts. Again, for safety reasons, it is a Departmental requirement that blind or otherwise incapacitated Amateur Station Licensees shall nominate other Amateur Station Licensees in possession of all facilities who are prepared to undertake equipment alterations and maintenance duties on their behalf.

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OPERATION OLYMPUS

To Marcus Hurburgh, VK7MH, Hon Secretary of the Tasmanian Division of the W.I.A., is due the credit of first suggesting the relay of a message of greetings by Amateur Radio from Greece to Australia on the occasion of the opening of the sixteenth Olympic Games in Melbourne in November, 1956.

It was appropriate that this message should be relayed via an Amateur Station near Mt. Olympus in Tasmania.

The proposal was discussed at a meeting of the Institute held early in

up to the last week that it would not be possible to obtain this permission and alternative arrangements were made to exchange personal greetings between the operators at the two stations in lieu of an official message if necessary. However, at the last minute, permission was received from the Administrations concerned.

In the mean time a preliminary visit to the Lake St. Clair area was made by VK7MH, VK7KA and VK7LJ, and the broad features of the operation determined. As mains power was avail-

able, the choice of the main transmitter was largely governed by ease of transport. Bill Watson, VK7YY (that "wiz-ard" on the key) offered the use of his compact 100 watt c.w.-phone transmitter and AR7 receiver. Ken Milten, VK7KA, provided a second AR7, while VK7LJ took his SX28 receiver and battery powered Type 3 Mk. II. outfit, the latter being held for emergencies in case of a power failure.

Ground plane aerials fed by co-axial cable were used for transmitting on 14 and 21 Mc., while long and not so long wires were used for receiving. Two complete stations were available for instant use throughout the schedule time.

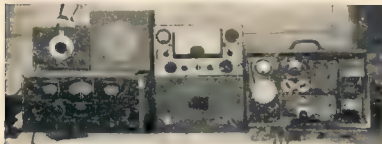
SVISV was contacted at approx. 0030 EAST on 18th Nov. As the 21 Mc. signals were fading out, it was decided to go to 14 Mc. where contact was quickly established and the complete message was received direct. Signals from SVISV peaked at S7 and in general provided good copy. A tape recording was made of the message as it was received. An acknowledging message was sent to the Attica Amateur Radio Club at this time. The official message was relayed to VK3W1 at 0930 for forwarding to the Games Committee in Melbourne.

Little is known of the set-up in Greece. However, it was apparent that there were several operators in attendance and it is possible that the message was transmitted from near the place of Olympia, as mentioned in the text of the message. At all events the Greek Amateurs did a magnificent job in meeting every schedule suggested and in putting a solid signal into Tasmania. A feature of the relay was the very ready co-operation which was so freely forthcoming from stations in all parts of the globe.

The party at Cynthia Bay consisted of VK7MH, VK7YY, VK7CH, VK7LJ, VK7KA, VK7BJ, VK7JO, VK7EJ, VK7BR, VK7DR, VK7FM, and Associates Grace, Tait, Shotten and Porthouse and friend D. Clark, who so kindly loaned the utility for transporting the gear. All did their share of the work—operating, cooking, erecting aerials, looking to the fire and assisting in a thousand and one ways.



VK7YY (Bill Watson) at the controls of VK7WE/7 at Lake St. Clair 100 watt transmitter and AR7 (VK7YY), and spare AR7 (VK7KA)



VK7WE/7 at Lake St. Clair VK7LJ's equipment 5X28 receiver Ge-no v l.o./30 watt transmitter, and Type 3 Mk II transceiver

1956 when it was unanimously decided to proceed with the project. A committee of two—VK7MH and VK7LJ—was appointed to undertake the necessary organisation. Federal Executive bestowed its blessing on the proposal and one of the committee's first functions was to secure the co-operation of the Attica Amateur Radio Club in Greece and to arrange for overseas stations to stand by in case of poor conditions preventing the direct contact with Greece that was so earnestly desired.

Co-operation was freely given everywhere. The A.R.R.L. were of immense assistance in providing liaison with Greece and in arranging for top ranking DX men in U.S.A. and Hawaii to stand by in case a relay was needed. The South African Radio League was anxious to assist. Difficulty was first experienced in obtaining the all important official permission to relay the "third party" message over international boundaries. It was feared right

Duralumin Aluminium Alloy Tubing for Radio Aerials

★ LIGHT ★ STRONG ★ NON-CORROSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

ALL DIAMETERS— $\frac{1}{8}$ TO 3"

RECOMMENDED FOR TELEVISION AND BEAM AERIALS

Price List on Request

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GUNNERSEN ALLEN METALS

PTY. LTD

88-92 YARRA BANK ROAD, SOUTH MELBOURNE

Phone: MX 4624 (9 lines)

Telegrams: "Metals," Melbourne.

RADIOTRON TELEVISION VALVE SERIES

The Radiotron 6BQ6GTB/6CU6 is a high perveance beam power valve designed especially for use in horizontal deflection amplifier service of television receivers. Design features include a mount structure which permits cool operation of both grids to guard against grid emission. The plate structure is such that heat is distributed evenly and not localised to form hot spots.

These factors, in conjunction with high design ratings enable this valve to deflect picture tubes having deflection angles up to 90 degrees.

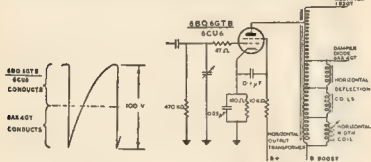


Figure 1

Figure 2

The horizontal sweep oscillator (Radiotron 6SN7GTA) provides a signal of roughly sawtooth form to the grid of the 6BQ6GTB/6CU6 (see Fig. 1). (Figure 2 is a typical circuit of a horizontal deflection amplifier.)

During the first half of the negative but positive going sawtooth, the valve is biased beyond cut-off (for this period, the 6AX4GT damper diode provides current to the deflection coils — see earlier article). As the input signal becomes less negative, the 6BQ6GTB/6CU6 commences to conduct. The output current is transformed through the horizontal output transformer into the deflection coils of the yoke to provide the second half of the sweep.

Due to the sawtooth form of the input signal, the peak current that is drawn by the plate may be 3.5 times the average current.

At the peak of the signal, which corresponds to the end of the horizontal sweep, the sudden negative pulse cuts the output valve off. This change in current through the output transformer, taking place during a few microseconds, results in a high peak voltage on the plate of the 6BQ6GTB/6CU6. This valve is designed to withstand a peak positive pulse plate voltage of 6000 volts.

CHARACTERISTICS:

Heater Voltage	6.3 volts
Heater Current	1.2 amps.

MAXIMUM RATINGS (Horizontal Deflection Amplifier):

Direct Plate Voltage	600 volts
Peak Positive-Pulse Plate Voltage (abs. max)	6000 volts
Peak Negative-Pulse Plate Voltage	1250 volts
Direct Grid No. 2 Voltage	200 volts
Peak Negative-Pulse Grid No. 1 Voltage	300 volts
Peak Cathode Current	400 mA
Average Cathode Current	112.5 mA
Plate Dissipation	11 watts
Grid No. 2 Input	2.5 watts

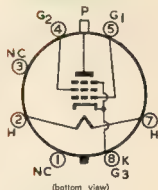
* The duration of the voltage must not exceed 15 per cent. of one horizontal scanning cycle. In a 625 line, 25 frame system, 15 per cent. of one horizontal scanning cycle is 10 μsec.

For further information on the 6BQ6GTB/6CU6 and other Radiotron Television Valve consult the Radiotron TVI Booklet. Additional copies of this advertisement are available free and post free on request.



6BQ6GTB/6CU6

SOCKET CONNECTIONS



- Pin 1 — No Connection
- Pin 2 — Heater
- Pin 3 — No Connection
- Pin 4 — Grid No. 2
- Pin 5 — Grid No. 1
- Pin 6 — Heater
- Pin 7 — Heater
- Pin 8 — Cathode, Grid No. 3
- Cap — Plate



AMALGAMATED WIRELESS VALVE CO. PTY. LTD.

47 YORK ST., SYDNEY

VC1/57

NATIONAL FIELD DAY, 1957

RESULTS

Portable

	Phone	Open	C.w.
VK2RS	—	203	—
VK2APF*	119	—	—
VK2AHA†	—	102	—
VK2AJO	80	—	—
VK2BW	38	—	—
VK3GE†	125	—	—
VK3LC	111	—	—
VK3ADW	—	97	12
VK3AHG	38	—	—
VK3ZM	—	32	—
VK3ZAT	25	—	—
VK3ZCG	17	—	—
VK4TN	183	—	—
VK4HZ	40	—	—
VK5QR‡	53	75	32
VK5EF	22	—	—
VK5LR	10	—	—
VK5XU	1	—	—
VK7KA§	—	43	—
VK7JO	—	78	—
VK9AU	—	31	—
VK9AS	24	—	—
VK9OQ	2	—	—

Multiple Operators:

* VK2ATD
† VK2XT
‡ VK3AN
§ VK5ZAX
¶ VK7LJ

Fixed

	Phone	Open	C.w.
VK2ZS	16	—	—
VK3ARJ	43	—	—
VK3OJ	28	—	—
VK5AB	88	—	—
VK5JO	45	—	—
VK5RR	13	—	—
VK5DF	11	—	—

AWARDS

Outright: Phone—VK4TN, Open—VK2RS, C.w.—VK7KA, Fixed—VK5AB.

State: VK2—Phone, VK2APF; Open, No Award; C.w., No Entry; Fixed, VK2ZS.

VK3—Phone, VK3GE; Open, VK3ADW; C.w., VK3ADW; Fixed, VK3ARJ.

VK4—Phone, No Award; Open, No Entry; C.w., No Entry; Fixed, No Entry.

VK5—Phone, VK5QR; Open, VK5QR; C.w., VK5QR; Fixed, No Award.

VK7—Phone, No Entry; Open, VK7JO; C.w., No Award; Fixed, No Entry.

VK9—Phone, VK9AS; Open, No Entry; C.w., VK9AU; Fixed, No Entry. Special: VK3ZAT.

Listeners: N. G. Clarke, 72 points.

One log disqualified.

R.D. CONTEST, 1956

Corrected Score: VK5LB, 74 points.

AMATEUR CALL SIGNS

FOR MONTH OF JANUARY, 1957

NEW CALL SIGNS

UK—
M.J.—D. A. Crowley, 25 Glenview St., Greenwich.
2NB—G. F. Barham, 10 Beaufort St., Northmead.
3QJ—G. C. Jenkins, C/o. Radio Station 2VM, Moree.
3ANB—R. J. Buty, 15 Lower Wycombe Rd., Neutral Bay.
2ACR—R. W. Richer, 3 Arthur St., Fairlight.
2AUS—S. R. St. George, Broadcast Station 2VM, Moree.
2ZBO—R. E. V. Crewe, 1 Raymond Rd., Neutral Bay.
2ZJM—G. E. McPhee, 102 Walli St., Kingsgrove.

Victoria

31J—D. E. Twigg, 33 Chapman Ave., Glenroy.
3EF—E. B. Ferguson, 127 Cole St., Gardenvale.
3MO—A. M. Owt-Atkinson, 32 Heather St., Geelong West.
3AGK—A. G. Kirmack, 19 Brunel St., Essendon.
3A1Y—J. W. Murray, 19 Edgvale Rd., Kew.
3ARI—R. M. Tutton, Lot 58 Wheatheaf Rd., Glenroy.
3ZCK—R. A. Low, 2 Airie Ave., East Prahran.
3ZDA—C. A. Davey, 121 Mitchell St., Northcote.
3ZCK—W. H. Harder, Station 3LK, Lubeck.
4DJ—G. F. Pooley, 38 Aberdeen Ave., Maryborough.
4MF—R. O. Britton, 42 Railway Ave., Townsville.
4ZAP—B. R. Rickaby, 33 Babbidge St., Coopers Plains.
Western Australia
6BR—B. R. Field, 5 Crocker Way, North Inland.

Tasmania

7ZAC—R. W. Harrex, 58 Creek Rd., New Town.

CORRECTION

Under the heading of new call signs "A.R." March: VK3ZDK is shown. This is incorrect. The call sign should read VK3ZDX, which was allotted to R. C. Rutledge, 40 Lawson Parade, Highett, 5.81.

SPECIAL

BRIGHT STAR RADIO are pleased to announce an addition to their line of Crystals. We are now manufacturing—

VACUUM MOUNTED CRYSTALS

for general communication frequencies in the range 3 to 14 Mc.
Higher frequencies can be supplied.

ADVANTAGES OF THIS TYPE—

- (1) Approximately three times the activity of normal plated crystal due to the absence of air damping.
- (2) Better frequency stability due to the absence of air friction.
- (3) Plating cannot deteriorate with time and cause frequency shift.
- (4) Two or more crystals can be mounted in the one envelope and thus save space.

Price depends on the tolerance and frequency required, and will be quoted upon request.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; Gerard & Goodman Ltd., 192-198 Rundle St., Adelaide; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 56 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne; Prices Radio, 5-6 Angel Place, Sydney.

BRIGHT STAR RADIO

46 EASTGATE ST., OAKLEIGH, S.E.12

UM 3387



DX ACTIVITY BY VK2QL†

QTH: of INTEREST

HSIMQ-47 Jaward Road, Bangkok.
ZDOWS-P, & T. Dept., Bues, Sth. Camerons.
ZCAL-P, & T. Dept., Jesselton.
FLAB- Marine National, Dibouti.
VSABO-P.O. Box 200, Kuching.
KG1CA-QSL via W3ZHL.

My thanks go to VKs 2AIR, 3AME, 20W, 4XJ, 5AB, 5BR, 9QSP 5BY, SHI, 5RK) and 5ERSU. The set should be back to normal next month. I hope.

THE MONIMATCH

(Continued from Page 3)

To check the accuracy of the impedance match in the system in use, first set S1 to read forward power, apply power, and set R2 for full scale reading, or at zero resistance if the power is insufficient to drive the pointer to full scale. Next, switch S1 to read reflected power. If the line is matched the meter will read zero. If the antenna system employs tuned feeders and a co-ax link antenna coupler the coupler should be adjusted so that the meter shows no reading, or as close to zero as possible.

With a co-ax fed antenna the matching system should be adjusted so that the reflected power is zero or as small as possible. While it has been emphasized many times in the past, the point is worth mentioning again—with such a system all matching adjustments must be made at the antenna. It is impossible to match a co-ax line to an antenna by making adjustments at the transmitter.

If you find that the indicator reads zero in the reflected power position when the transmitter is running continuously, indicating a matched line, but that there is a momentary "flick" of the needle when the transmitter is keyed, you can be fairly certain that there is a parasitic oscillation in the transmitter. Also, if you find it impossible to get a reflected reading of zero, it may be because there is enough harmonic or subharmonic content in the transmitter output to cause a "residual" meter reading even with perfect matching at the fundamental frequency.

To use the bridge as an output indicator, switch S1 to read forward power and adjust R2 so the meter reads about half scale. Then tune the transmitter for maximum meter indication, while holding the plate current to within the ratings for the amplifier tube or tubes. You'll notice when tuning a tetrode amplifier having a screen dropping resistor that the maximum output tuning point won't always be exactly the same as the point at which the plate current dips to minimum. Also, you may find that as you increase the amplifier loading the output doesn't increase correspondingly, and may even go through a maximum and then drop off as the input to the amplifier is increased. You'll probably also find that the power output is rather sensitive to grid excitation with a tetrode amplifier, and too much grid current is just as bad as too little. All of which adds up to the fact that an output indicator such as this gives you considerably more information than the plate current dip alone. Working together, the output indicator and the plate milliammeter will do a good job for you.

PGTKX, PGTKX, SAITC, KASBK, ZD3A, ZD9P, VRBC, 3AME, CBA1P, FM7WF, FM7WR, ZCALP, PRBZ, LAHBC, VHB, FYTPT, VQMG, LUBA, KCRUZ, TRUB, PG7KC, KCHTH, ZC3JM, ISRAM, CN8FJ, 5R4CH, ZD3A, APRRH, VP7NI, KWGCB, ZK2AB, CBA1P, VKIAB, VQSG, FBHR, FBHCK, OAAFP, VR2P, VQ4JG, 20W, UAO, KOB, 5K*, AA*, KJA*, KYB, UAUVR, UABKYR, UABLA, UAUUP, UBSUB, UCKABK, ULS-KAA, UUKAA, UUBAA, ZLIAZ, VRUB, U5A4B, AP2RH, RJEME, HK3CR, HK3BY, SLIBD, VQGLQ, ZC4IP, VOXX, LUKKA, YFIRP, KJBR, 3QL, URJAN, FM7WP, FM7WR, FYTPT, ZK3AB, UUBAA, VSAO, UUKAA, ZCALP, ZLIAZ, OT7MI, VQ3CJ, ZDPAZ, VP1LU, ITAII, ET2US, ZPIAP, KGICA, EASDF, 3AME, 5IFP, VPSRG, L21W, 5RK, UASDQ/MM, GM3TN, OAFM, VK9AJ, ISRAM, UL7IKB, ZC3JM, FBRDD, FBRBR, UAIKAE, ET2US, VQ4GF, VYBHL, YVDE, YVIAZ, TP7WEM, 5BY, ZC3JM, BERSIB, at his usual listening post, heard C9A8, C2A4D, EABW, PQ8AF, PJ-AB, UASDQ/MM, KOSCP, KCRUZ, KGICA, P7YRQ, CDSJ, VKIAB, VQSG, ZK3AB, ZCAL, VP1PL.

11 Mc. A.m.: 3AME, FM7WQ, OAAFP, HZ1TA, CKXAZ, VS4JT, VR3P, 3AB, KZ4IF, HSIMQ, West Europe, OKXHK, KCSPP, ZLIAZ, VS4JT, ET2UL, HZ1TA, ZBRP, ODSBU, BERSIB, RADJ, KBAE.

21 Mc. C.w.: 3QL, W*, VE*, C9A8P.

31 Mc. A.m.: 5AB, ZK2SDX, KZ3CP, KZ3IF, ZS1D0, JZAPC, JZ2PB, KPA4Z, UQJAN, SVIAB, SVIAZ, West Europe, CR7BB, ODSAF, 4X4FT, 4X4C, 45TMG, VPKC, VS4JT.

22 Mc. A.m.: 4XJ, W*, VE*, DL*, G, HC-1KV, HP1LO, VP1EE, KL7CS, VU8RM, OKIKT, VS4BO.

QSLs enumerated gladdened the hearts of 2AIR, HP1LO, VP3YQ, VU3IA, ODSIT, VR3B, XE1IP, 3WIAA, UCKAB, PJ3AN, 3AME, OABM, OAAFP, YU3YQ, SVIAB, XE1IP, 4U-4E, LUBAL, LUBZW, ZE1JV, EA2CB, FAN-K, EA7AM, PY4RO, LUD4FP, 20W, KJBS, 3QL, 3WIAA, FBABR/BS, OUC7M, UCKAB, ZC3JM, G5UC/M was from Jucar on 21 and 22 Mc. c.w. and phone, 10 watts in a whip on his bumper bar, 5H1, UASAP, 5W4W, KY1H, HRIEZ, YU4OB, BERSIB, C9A8, FLAB, ISRAM, VK1RW, VRIC, VY3AN, ZD3GW.

NEWS AND NOTES

VP5AO on Coats Land claims he will be a new country, but my opinion is he will be Antarctica, but just in case, don't pass him by.

JZ0FA, JZ0PB and JZ0PC advise they will be returning to England in May. If you need a contact, watch 21 Mc. around 1000z daily when VK5AB maintains a sked.

TT0KAB told W6NKR he was in Tanna Tava.

UA6OM is located in Inner Mongolia, which is the 23rd zone (VK2AIR).

UA3DQ/MM is the Russian ship returning from the Antarctic base and apparently has the old ops. of UAIKAE on board as there are different ops. at UAIKAE now and the op. of the ship is Alex, one of those previously at UAIKAE (VK5RX).

There are three active stations on Christmas Island—VR3B, VR3F, and VR3G.

According to VQ8AB there will soon be a prominent station on Comoro Island.

AP2RH is expected to leave Pakistan in July.

CR4AB is active from Cape Verdi. (last four pars. from W6YY).

ACTIVITIES

8.5 Mc. Nil.
11 Mc.: 3AME reports VK2A*, EAGAF, HLICA, ZK3AL, 30K, G* (9730-0800z), UA-1KAE, UB, YU, ZS, C23AG, BERSIB, West Europe, UAKFYG, UB, ZEAJY, ZK3.
14 Mc. C.w.: 2AIR, VP1PL, HK3, FM7WR, SP3D*, ZK3AB, VQ4ET, VQ4VY, CBA1P, KGICA, ZCALP, RJAC*, UASOM*, PG7KC.

† Frank T. Hino, 30 Abbotsford Road, Homebush, N.S.W.
* Call signs and prefixes worked.
z—zero time—G.M.T.

S.W.I. SECTION*

This month we begin a new feature in this column, named "S.W.I. of the Month." To enable me to keep this feature interesting your assistance is needed. Drop me a line telling me all about yourself and your interests in general and you may be featured in this capacity. Now to the "S.W.I. for April." If you look up the scores for the latest VKZL/VKZL Contest and the VKZL/VKZL Merle leading the Listeners' Section. Geoff who is 19 1/2 years of age holds the Victorian Amateur record for 1937 and is one of four blind members of the Group. He has been listening for about 2 1/2 years and in that time has gained the following awards: 1934 VKZL Contest 1st; 1935 VKZL/VKZL Contest 1st; 1936 VKZL/VKZL Contest (the latest), 1st, with 1394 points scored.

His first receiver was the household radio-gram with no r.f. stage, but he now uses an Eddystone 750 with a three-bander W&K beam 10, 15 and 10 m. erected by his father to suck in the r.f. An A8B may soon be added to the station set-up. Geoff is at present studying for his Leaving Certificate at Wesley College, Melbourne. He was classed as a Victorian Victorian Institute School for the Blind four years in succession, and thus created a record. His keen interest in radio has also won him several Xcellite publications on Amateur Radio obtained from the U.S.A. He listens mostly Friday, Saturday and Sunday nights, but fits in a little time now and again during the week.

His other hobbies include record collecting, music, chess, playing the piano, and playing cricket with other old boys from the R.V.I.B. And last, but by no means least, Geoff is a national supporter of the Camberwell Football Club, it wonder if he's as fanatical as Eric Trebbleton!

By the way, let me know what you think of this feature, please.

INTERSTATE NEWS

Only one letter from VK3 this month, the writer being Barry Cartwright of Richmond, N.S.W. (Thanks for the letter Barry). He's now in a busy radio building business, covering 20, 15 and 11 m. and now hopes to really hear some DX. His next projects will probably be a 2 m. receiver and a rotary beam. His cousin, Laurie Cartwright, who is waiting for a Z call to be issued, and AAP are helping Barry when he strikes trouble. (Good luck to all!)

VK3 Group Feb. Meeting.—This meeting took the form of a night of planning for our future programme. There were many good suggestions put forward so that future meetings and learn all about the interesting events in store. "We meet on the last Tuesday of each month at 8 p.m. at the W.A. Rooms 181 Queen St., Melbourne." At the March meeting George SWJ will have given a demonstration on a portable. We'll let you know next month how it went.

The April meeting will take the form of an Auction Night, so come along with all the pieces junk you have and want to be rid of. Capacitors, valves, resistors of unknown value, odd chassis: bring them all along.

Agony.—The coded letters, we return to correspondence. Mr. W. H. Bempel, from 3 miles out of Kyrabram, where local radio is in the air, has written me a long letter. He has just retired from the Air Force and taken up farming. A rhombic antenna and an SX17 take care of the signals for him. While in the Air Force, he was a member of the squadron radio club and has worked quite a deal of c.w. DX from the club station. SX17. He hopes to have his ticket and be able to carry on operating before the end of this year. Let's hear more from you GEM. I'll answer your letter as soon as I can.

The old faithful, Dave Jenkins, WIA-13039, from Orbst, is still managing to wield the pen with such accuracy that he isn't even soldered yet. Just twisted together. Now he's going to double up on the 1's. In an endeavour to make his tube sockets work, because the flat filter won't work. Keep plugging at it Dave, and we hope you fix it too. By the way, heard UACG on 1 m. c.w. at the unusual time of 1052 hours G.M.T. recently.

VK3 Group. From John Campbell we learn that the Local Group has elected a President of Minutes Secretary. The Group have asked me to convey their thanks for a job well done. John says that he is now in the area has now moved to 37 Thanet St., Brooklyn Park, South Aust., asks that all correspondence

be sent to that address, and that if it is intended for this column it be posted in time to reach him before the 25th of each month. John's new location is about 300 yards from the local A.R.C. station's transmitter and his antenna is a whip but he's having no trouble. He has a 20 ft pole to go up soon so he should be able to hear plenty without any more help. The VK3 Group hope to have Gordon SXU come along to one of their meetings. We talk on his recent trip to the Nullarbor Cave.

John also tells us that the South Australian Division will have a stand at the Royal Adelaide Exhibition at the Victoria Memorial beginning on 3rd April. VKSWI will be in operation on all bands and S.W.I. Group members will be assisting in every way they can. Hope everything goes well for you chaps.

YL CORNER

BY PERY MONCUR

Our YL for this month is Gwen Churchward, VK3US, YXL of Rex VK3VL. She is very tiny, well under 5 feet I'm sure, but has a very happy, friendly personality. She and Rex live at Leongatha, a country town in the south east of Victoria. Their home is located right on top of a hill, a wonderful location for a rotary beam, also a wonderful location for a rotary clothes line, a fact which along with radio has to be very much considered for as Gwen is concerned as she has two quite small harmonicas, Peter 3 years and baby Eric, and it's a case of signs on one rotary and lots of nappies on the other. However, with the help of Rex, who is very considerate and helps out wonderfully with the chores, she manages to get on the air quite a bit in the evenings, but this is the end of the story, let's go back to the beginning, somewhere towards the end of the 1930's.

In those days when they were both quite young they didn't have very much money to spend on radio, in fact they didn't have very much of anything apart from just loads of enthusiasm and one very important thing in common, they wanted to be together and wanted to do the same thing together, and that thing was radio. They started off with their shack in an old fruit pickers' hut on the old owner's father's property, they had the shack and they got married and the old hut was converted into a five room dwelling so Gwen would be in her father's house. Rex was away in the Army and also it was a home for Rex to come to when he was on leave.

When the war was over, they both really settled down to radio and so for the time being they studied together and took turns at sending and receiving c.w. to give practice to each other. To get practical experience Rex always let her do the building of their equipment, wiring up power supplies, modulation equipment, etc. The first rig she completed was her first 2 m. rig, and she still never forgets the thrill she got when she turned it on and it worked first shot.

She continued to study radio, day and night for six months and then the big day came—the A.O.C.P. examination. This turned out to be a very disappointing result, they both sat for it and Rex got through, she missed out and you just couldn't imagine what happened her, she went through with flying colours. A.O.C.P. in theory and in practice, she was those damn Regulations that let her down. She got 60 marks for them and would have only needed 70 to pass and so for the time being she came home with her licence and she didn't have her. She had studied hard at theory and c.w. but she just hadn't had time to spare on thorough study of the Regs. However, it was only a matter of time and the next exam she made sure of them.

The day she came home with her licence they had a real celebration, but perhaps not what everybody would consider as celebrating. What did they do? Why, they had a party, got tea over as quickly as they could and then rushed out and turned on the main switch so the could air that new call sign and they went flat to the boards till they had heard of the next morning, in fact till there just wasn't another signal on the bands to come back to them.

She has always enjoyed radio and anything to do with it and recalls the first Field Day she and Rex went on. It didn't have a lot of course. In those early days so it was a matter of pile up all the radio gear on the wheel barrow and together they pushed it up to the top of a hill where they erected dipole on broom sticks. They have entered in lots

of Field Days and at one time they held the State record for a 6 metre contact, working from Mt. Bunnington to VK3PK at Mt. Buffalo with a little portable, a distance of just under 200 miles.

She has made a lot of good friends in W. Land; one, Lesore Conn, WINAZ, she talks to two or three times a week when conditions are good and exchanges magazines with her, and another couple, also a husband and wife team, who they are good friends with, is Arlie Wellis and her husband, Roy WAVEO.

Before she had the children, Gwen used to work a lot of DX but now finds she can't spare so much time for DX but is happy just to be able to fit in time for 2 m. contacts for which she uses a 332 and 4 over 4 beam and crystal locked converter. She and Rex also have equipment for 8, 10, 20 and 40 m.

At present with the help of their good friend Jim VK4DI they are building their home at Leongatha where they are living in the part that is already finished, but still have another two rooms to add to it. Of course the shack, which is detached from the house, was built very first thing, but then with such a "radio-active" family, you wouldn't expect anything else would you?

Low Drift Crystals FOR AMATEUR BANDS

ACCURACY 0.02% OF
STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted £2 10 0

Mounted £3 0 0

12.5 and 14 Mc. Fundamental
Crystals, "Low Drift,"
Mounted only, £5.

THESE PRICES DO NOT
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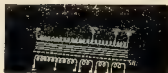
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FEDERAL, QSL, and DISTRICT ANNOUNCEMENTS

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FOR 1967

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A noteworthy visitor to Sydney during the last few days has been Jim Morrisett, Assistant Editor of "CQ" Magazine, otherwise K10XK. Jim has been on Operation Deepfreeze with the U.S.S. Curtis which visited the U.S. base in Antarctica and was prevailed upon to give a talk over VK2WV on Sunday, March 5. It was rather fortunate that conditions did not allow his most interesting talk to be more widely heard. One theory is that the Curtis had something to do with the Aurora which played havoc with conditions during that week-end.

New for a few words on a very sore subject concerning the U.S.S. Curtis and its bands. There have been some discussions on this subject on the air, but Noel ZAGR, who so kindly offered to gather the reports and details of the offenders some months ago has not been overworked. It's not enough to talk about it—as reported in these notes months ago, we need report of times, frequencies, call signs, etc. If a commercial station interferes with you in exclusive Amateur territory please send all the details you can to Noel ZAGR—the commercial would very smartly do some action. This is the only way we can get some action.

HUNTER BRANCH

The February meeting of the Hunter Branch was held at a luncheon at the University of Technology on the 4th of the month. Secretary, Charlie ZARY, was absent on holidays, so Varley ZSP acted in his stead. President, Bob ZXT, conveyed the congratulations of the meeting to Harry ZAF, who had recently received the OH Award for working 13 Finnish stations in five districts.

Lionel ZCS gave a lecture on a p.c.-coupler and an aerial tuner which he has in operation. He explained their method of construction, gave diagrams and a series of results obtained. Following the lecture two films of topical interest were shown and the meeting concluded at 10.30 p.m. with the usual ragchew. There had been no reception in correspondence that the I.R.E. had invited Branch members to a lecture on a "Project TV Receiver" on the following Friday night and those Branch members present in attendance. The lecture were Varley ZSP, Bill ZXT, Chris ZPZ, Frank ZFX, Les ZACR, and Associate Bill Waitt.

Associate Les Fairburn has been heard word that he has passed for his Limited Licence. Associate Frank Stobbs, who has not been in the best of health, attended our last meeting. There were 14 in attendance. The lecture were Varley ZSP, Bill ZXT, Chris ZPZ, Frank ZFX, Les ZACR, and Associate Bill Waitt.

Ernie ZFP was seen examining the 100 ft. high water tower at Stockton on which ZASJ would like his 2 m. beam, but Alan ZFT was heard testing on 40 m. recently. Let's hear more of you Alan. Members of the club were quietened down since Bill ZEL went to the Blue Mountains for his holidays, but will soon be up when you get him. Harold ZANA and Bill ZXT had a station operating in the National Field Day at Toronto. Reports indicate that Harold and Bill did quite well. Jim ZAB and Les ZACR were 5000 m. and both became fathers during the month, so that's two more junior ops. in the district.

N.S.W. DIVISION W.I.A.

NINTH ANNUAL

URUNGA

CONVENTION

will be held over

EASTER WEEK-END

APRIL 19 TO 22

This is a week-end where you can meet your Ham friends. Full details re accommodation, etc. appeared on page 14 March "A.R."

The next meeting of the Branch will be held on 13th April at 8 p.m. at the University of Technology at Tighes Hill. Listen for 3AWK every night ATNHS on 50 and 70 m. for latest news on Hunter Branch activity.

UPPER HUNTER GROUP

Things are very quiet in this area at the present time. When the 2CV heard on at lunch time and is still working on the AT5, 2VU busy calibrating v.h.f. grid dip oscillator and still most ATNHS on 50 and 70 m. Les ZCS is moving to Newcastle and informs me that he will be soon well under way on 144 Mc. as he had no room for building gear in his quarters at Scone. ZAGR has been holidaying at Terrigal and visited all the local shackies—3ON, 2RU and 2EH. For those with ATNHS's, Ken reports that by two simple modifications, the stability and quality of modulation can be greatly improved. (1) Reduce the value of coupling condenser between the m.c. and p.a. from 300 pF to 50 pF. (2) Increase the screen resistor of the 807 modulator from 3,000 ohms to 22,000 ohms.

Main item of interest was the alerting of the station when the river is in flood. When the river and the rivers started to rise. Fortunately it blew itself out and the service was not required. According to the long range weather forecast anything is likely to happen in the next month or two and suggests that we adopt the motto "Be Prepared."

NORTH COAST AND TABLELANDS

Don't forget Urunga at Easter! Crieff, Noel and company are all set to go for another bumper Urunga Convention. What you have not looked at accommodation yet? Please write to Noel "posthastly"—he may be able to do something for you, even at this late stage. We are hoping for a good roll-up of North Coast Zone members this time and the Convention gets bigger and brighter each year. See you at Urunga!

TAMWORTH AND DISTRICT

Sam Lyle, who has been holidaying in VKS, will be returning to N.S.W. early. We hear he was in a spot of bother, but he came with a large thundercracker during his last "holiday" with a certain military establishment; what happened, Noel ZATD and Dennis ZAWV have been very busy for a while, allowing little time for Ham Radio. Please keep a lookout for ZAPF who will be operating a station for the Urunga Race and Electric Club at the Tamworth Show on April 19 or 20. The holiday season seems to be really on. Bruce ZAD has also been holidaying. In Sydney, Ben ZABZ is a bit of a snail, you can spell it, Ben) having some strife with microphones and spending a lot of time playing with a mysterious "gadget"—also has new rig in way.

SOUTH WESTERN

During early February your scribe, accompanied by Assoc Stan Abbey and two other friends, made the trip to Albany to call on Don and Herb. We found that Don and Herb ZQD had been in a bit of a spot of bother, and were later joined by Bert ZAEW on the banks of the Murray. The fish were a bit like ZD, but at least we did bring a bit back to Coleman, thanks to the Albany boys.

We had some excitement on walking back from the river. While walking in single file, Don stepped on a 4 ft. tiger snake, and while scribe stepped on the snake, and you can judge that as I am writing this that I was lucky to escape. However, a quick was procured and the tiger duly dispatched. I am sure all were a little white and shaky for a few minutes after. We were well looked after by Glen for extra, as we are always when we visit Albany.

The Coolamon Key Clickers Club, aptly named by Ian Hunt, is growing in size. We now have four in class. Latest additions are Arnt Orntsen and Ken Vinkery from Wagga, who make the trip of 20 miles every second Tuesday. Your scribe also has a couple of visits lately from Alf Moya, ZBW, of Wagga. Alf looks like getting more active soon. No news from Grinith or Tinnut.

VICTORIA

At the March general meeting of the VK3 Division, members were again privileged to hear Mr. Kenneth Smith, Director of the radio and television section of the Royal Melbourne Technical College, as the lecturer. The

FEDERAL QSL BUREAU

Dick Kemp, VK5VU, 12803 Issle Ave., Downey, Calif., ex-WFMT, requests publicity to the fact that WSMET is now permanently closed, and that anyone not having received its QSL card may obtain some from the new QTH.

The U.S.K.A. advise details of their new Contest, Melville 63, which this year is scheduled for 1900 S.W. May 15, to 1900 G.M.T., May 19. Objective is to contact as many of the 22 Swiss Cantons as possible, either by phone or by mail. The usual serial number exchange is to be made. Five digit for phone and six digit for c.w. Three points are earned for a contact and the total points will be awarded to the number of cantons worked. Logs must reach B. R. Boer, HB9QO, Communication Manager U.S.K.A., Lauterbachstr. 8, Z.G.O., Switzerland, by June 6. Logs must be separate sheets and the band used and the usual certificate of conformity with rules and spirit of the Contest must be included. The certificate will be awarded to the two high-scoring entrants in each country.

When the President of Portugal visited Mozambique in late 1965, a general exhibition was held at Lourenco Marques to mark the occasion. The exhibit buildings were set up amongst trees and gardens and included an Amateur Radio exhibit. A 100 watt transmitter was operated for the duration of the exhibition by CRI Amateurs using the call sign CR100. Many VK stations were contacted and a QSL forwarded to each. The QSL is in the form of an eight-page booklet with the call sign prominently displayed on the front cover. Any VK who did not receive his QSL may obtain same by application to CR100, Box 415, Lourenco Marques, Mozambique, East Africa.

ZL4GA, Alan Frams, informs that for every QSO QSL card he receives, he gets two s.w.l. report cards. Watch until you feel the full impact of CRI International.

—Ray Jones, VK3RJ, Manager.

NEW SOUTH WALES

As is usual at the February meeting of this Division, the V.h.f. Group provided the lecturers for the meeting held on the fourth Friday at Scone. Members of the group, including Perc ZAPQ and Bob ZOA, gave interesting talks covering a wide field of v.h.f. techniques in the limited time available, and the Division seems assured of even more to come to the v.h.f. frequencies as a result of their efforts.

A spirited discussion took place on the subject of the Institute's New South Wales Headquarters station and its building at Quarry Road, Dural. The building, by the way, is now complete. It is ready for the installation of transmitters, water tank and furniture. A rather more powerful signal should be heard from VK2WV by the time these notes appear in print.

Orders are coming in steadily for the excellent car badges which are available from the N.S.W. Division Secretary at Box 100, Sydney. Samples have been sent to other Divisions and the badges are now available at a cost of 30/- plus postage. The badges are the Division's seal and are a true replica of the Institute's lapel badge, very well executed.

Club members recently visited Jim EAST for an inspection of his gear. Jim is well known here for the painstaking care he puts into his constructional work. We were privileged to view a wide range of equipment which not only looks very professional, but also performs equally well. A 3 stage ic is monitored by a compact c.r.o. unit; freq. standards of 100 Kc. were obtained by a nice osc. unit. There were also converters for all bands in the course of construction. As well as running on a.c. the Ham station can run on batteries with vibrators and generators. A new Ham shack recently constructed makes operating a delight. Jim's wife, Con, and the ladies brought a very happy evening to a close with a fine supper.

Non SAYB gave us a most interesting talk on Earthing Systems and their application. See you at the Convention.

QUEENSLAND

BRISBANE AND DISTRICT

Maybe we're a little premature with this news but we just couldn't resist the temptation. You, no doubt, remember our part in the Junior Chamber of Commerce "Hobbies Show"; well, the J.C.s. were so happy with the show that they are already planning the next show in November. Now here's the part we have been asked to play. The next "Hobbies Show" will be in the City Hall proper and the theme will be "International Understanding." It would be better if we quoted from the J.C. Secretary's letter: "We propose planning the Show around the Amateur Radio Hams who are best equipped to carry the theme into operation by world radio contacts." By the way, a proportion of the proceeds will go to that worthy cause, "The International House Appeal."

Band conditions have not been wonderful lately and the only occupants of 20 mcs at night seem to be Tom 4TT, Del 4RZ, "Hon. Pres." 42M, and our for northern "agent-extraordinary" Norm 4NT. For associates who want slow Morse copy, Norm has 3 w.p.m. transmissions every Wednesday night from 8 to 4 p.m. on 14343 Kc. or thereabouts. Norm at present has only planned to continue these weekly broadcasts until the April exam, but I know that he will continue after that date if he is asked nicely. We believe a special "thank you" goes to Bob Fitzsimmons for punching the key. Bob is an associate of the Division and your Secretary hopes it won't be long before we have Bob as a full member.

Council was disappointed at the lack of response to the appeal for members willing to

give assistance in emergency to have their names recorded in a list for Inspector Lloyd. All of a sudden names started rolling in with haste, and now we can give Police Rescue and Intelligence a good size list. You can still send your name in to the Secretary, but be certain you include the name of the Police Officer in charge of your district.

We have some very good disposals gear coming up and the price will amaze you. We won't tell you what it is yet, but when we have the gear safely in our hands, the full dope will appear in "QTC." Don't waste time getting your name in if you are interested because there will almost certainly be a ballot for it.

Our latest DX visitor, Bill Benton, W7QFY, has been and gone but we are still in a state of amazement at some of the gear he had, especially the cute little seven transistor portable. It was only about seven by three and a half by two inches, but it gave as much output as the normal portable on the market here in Australia. It got its "herbs" from two torch cells. Now is the time to get the clues on these "gimmicks" so don't pass over the articles by Hans 1AHH, which are fairly regular in "A.R." We have heard a whisper that a big Ham equipment manufacturer in the States has a combination of receiver and 100 watt transmitter in the size of normal receiver ready for release in the near future. It is just full of transistors.

The VKX Division has had some special W.I.A. badges struck for fixture to cars and if anyone is interested a letter to the VKX Division may bear fruit. This is the best way of identifying your vehicle as belonging to a member of the W.I.A. because we think it is almost impossible to persuade the State Government to grant us number plates with our call letters as they do in the States.

TOWNSVILLE

Quite a large roll up was experienced for the monthly meeting held on 28th February at Graham Walker's residence. Indeed it was quite encouraging to the club officers who have been disappointed at times when it is hard to get a quorum. John 4DD was welcomed as a new member and put forward quite a few suggestions to try and hold the members' interest. Just shows what new blood will do. As Graham had to leave the meeting early, it was decided to defer discussion on another class for the A.O.C.P. until the next meeting in the hope he will again be the class supervisor.

An idea for each Amateur to give a small lecture on some aspects of Amateur Radio in turn was enthusiastically received and John (Continued on Page 30)



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